fastenable at least indirectly to a supporting element; means for transmitting readings supplied by said pressure sensor; and evaluating means for receiving the readings and determining reading differences which occur during a sinking of said pressure sensor on penetration of the supporting element into a waterbed.

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~~25~~. An arrangement as defined in claim ~~24~~, wherein said pressure sensor is directly fastentable to a supporting element; and further comprising means for directly fastening said pressure sensor to the supporting element.

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~~26~~. An arrangement as defined in claim ~~24~~; and further comprising a device connected to the supporting element, said pressure sensor being fastentable to said device; and means for fastening said pressure sensor to said device.

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~~27~~. An arrangement as defined in claim ~~24~~; and further comprising means for converting said readings ~~as~~ into electrical signals; and means for transmitting the converted signals to said evaluating means and including an electrical signal lead.

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~~28~~. An arrangement as defined in claim ~~24~~, wherein said

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evaluating means include a computer which automatically acquires and stores the readings.

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~~29.~~ An arrangement as defined in claim ~~28~~, wherein said computer is formed so that it constantly computes and displays a penetration depth from the differences in the readings.

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~~30.~~ An arrangement as defined in claim ~~24~~, wherein said pressure sensor is formed so that it is suitable for measuring absolute pressure of substantially 200 bar and has a measuring accuracy of substantially 1 mbar.

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~~31.~~ An arrangement as defined in claim ~~24~~, wherein said pressure sensor is formed so that a signal of said pressure sensor consists of an analog electrical quantity; and further comprising an analog to digital convertor which converts the analog electrical quantity into a digital signal which is transmitted to said evaluating means.

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~~32.~~ An arrangement as defined in claim ~~31~~; and further comprising an electronic subtractor and an amplifier arranged between said pressure sensor and said analog to digital convertor so that a preselectable part measuring range is expandable over a whole conversion range of said

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analog to digital convertor.

38. An arrangement as defined in claim 27; and further comprising a digital serial interface through which the signals of said pressure sensor is transmitted to said evaluating means.

35. An arrangement as defined in claim 27, wherein said pressure signal is formed so that it supplies a pressure dependent frequency signal and a temperature dependent frequency signal; and further comprising two frequency-digital transducers which digitalize said frequency signals and transmit two digital signals to said evaluating means.

36. An Arrangement as defined in claim 24, wherein the supporting element is a hammer serving to pile-drive piles into a water floor; and further comprising supply lines provided on the pile hammer and including said signal lead of said pressure sensor.

37. An arrangement as defined in claim 36, wherein said evaluating means include an computer which monitors and controls the pile hammer and also serves for an acquisition, storage and evaluation of the readings of said pressure sensor.

38. An arrangement as defined in claim 37, wherein said computer also registers a number of pile drives and computes an energy sum used for the pile drives.

39. A method of determining a penetration depth when putting in place supporting elements into a water bed, the method comprising the steps of measuring a water pressure by a pressure sensor which is fastened under water at least indirectly to a supporting element or to a device connected to the supporting element; before a beginning or during a putting in place of a supporting element, taking a first reading of the pressure sensor and keeping the first reading as a reference value; after consuming a certain amount of energy for the putting in place of the supporting element or after the completion of a time interval required for this, taking a further reading of the pressure sensor and retaining the further reading; from a difference of a preceding and further readings, calculating a penetration depth achieved by an intermediate putting in place; in case that a desired penetration depth is not yet sufficient, repeating the preceding method steps from the step of the taking and retaining the further reading of the pressure sensor.

40. A method as defined in claim 39, wherein said calculating includes calculating by a multiplication of a difference by a suitable calibration factor.

41. A method as defined in claim 39; and further comprising the step of taking into account a parameter selected from the group consisting of a tidal compensation, a gravitation acceleration compensation, a depth dependent density change of the water, and a combination thereof, for improving a linearity and accuracy of a conversion function of pressure into distance.

42. A method as defined in claim 39; and further comprising during a measuring interval, the steps of extracting and retaining further data from the device for putting in place the supporting element.

43. A method as defined in claim 42, wherein said extracting and retaining includes extracting and retaining from the device of data for determining a required amount of energy for putting in place the supporting element.

44. A method as defined in claim 39; and further comprising the steps of registering a point in time for each retained reading.

45. A method as defined in claim 39; and further comprising the steps of calculating from the readings a penetration depth and representing the penetration depth on a diagram.

46. An arrangement as defined in claim 40, and further comprising, before a beginning a determination of the penetration depth, the steps of reducing the reading of the pressure sensor to almost zero by an electronic subtractor and amplifying a residual value by preadjustable multiplication factor with an amplifier, so that a size of the multiplication factor is preselected such that an amplified residual value, with a maximum expected penetration depth, does not exceed a highest analog value which can be processed by a subsequently connected analog to digital convertor.

47. A method as defined in claim 46, wherein said reduction includes a reduction of the reading of the pressure sensor by the subtractor automatically before the beginning of the determination of the penetration depth.

48. A method as defined in claim 30, and further comprising the step of digitalizing a reading of the pressure sensor by an analog to digital convertor with a digital resolution of more than 12 bits.

49. A method as defined in claim 30, and further comprising the step of providing the pressure sensor with a digital serial interface which has a resolution of up to 0.005 ppm over a range of 3000 PSI.

50. A method as defined in claim 38, and further comprising the steps of transmitting a reading of the pressure sensor by a first frequency signal and a reading of a temperature sensor by a second frequency signal.

Please amend the abstract as follows:

With an arrangement for determining depth [(20)] when putting in place supporting elements [(2)] into a water bed [(5), according to the invention], there is provided a pressure sensor [(7)] for measuring the water pressure which is fastenable to the supporting element [(2)] or to a device [(1)] connected to the supporting element [(2)]. The reading [(11)] supplied by the pressure sensor [(7)] are transmitted via a signal lead [(15)] to an evaluation unit [(16)] which determines the penetration depth [(10)] of the supporting element [(2)] from the reading differences which occur during the sinking of the pressure sensor [(7)] on penetration the supporting element [(2)] into the water bed [(5)].

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